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(54) Title: A METHOD OF ESTABLISHING AN EPIGENETIC CLOCK FOR AVIAN SPECIES

(57) Abstract: The invention pertains to a computer-implemented method of establishing an epigenetic clock for an avian species, the method comprising (a.) identifying and determining the methylation levels of specific CpG sites within the genomic DNA obtained from a plurality of different biological sample materials deriving from the avian species and representing specific time points within the chronological lifespan of this avian species, (b.) excluding all CpG sites associated with single nucleotide polymorphisms (SNPs) from the CpG sites identified in step (a.), (c.) excluding all CpG sites located on the sex chromosomes (Z and W) from the CpG sites obtained in step (b.), (d.) performing a tissue-specific normalization step for the CpG sites obtained in step (c.), and (e.) correlating the CpG methylation levels of the CpG sites obtained in step (d.) with chronological age using a penalized regression model.



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